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SUMMARY

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TANNIN-FORMALDEHYDE ADHESIVES

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TANNIN-FORMALDEHYDE ADHESIVES

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Mangrove, wattle and Pinus radiata bark extracts react readily with formaldehyde to form resins. The reaction rate varies with species and type of extract and is influenced by pH and the presence of certain soluble salts in small amounts.

Using simple formulations, it is possible to prepare waterproof adhesives which will withstand immersion in boiling water for 72 hours. The adhesive properties of three commercial tannin extracts studied differ considerably. Bond quality can be improved by adding a small amount of suitably formulated phenolic resin to the adhesive mix. The use of alkaline adhesive mixes or tannin extracts may result in decreased bond quality.

Tannin adhesive formulations which produce a satisfactory waterproof bond with commercial veneers have been developed. Trials under factory conditions have been made with wattle tannin adhesives. The trials have confirmed laboratory experience with rotary peeled veneers, but, because of dark colour and a tendency to penetrate, the adhesives are not at present recommended for bonding thin decorative face veneers.

Exploratory tests indicate that wattle tannin-formaldehyde is suitable for bonding Pinus radiata chip board. However, in this application the colour of the adhesive may limit its usefulness. In addition, deficiency in tackiness can have an undesirable effect in board forming.

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